

Public Workshop



Urban Bus Engine Emission Standards, Fleet Rule for Transit Agencies, & Zero Emission Bus Rules

Mar 29, 2004 - Sacramento

Mar 30, 2004 - El Monte

California Environmental Protection Agency



Air Resources Board

Outline of Today's Presentation

- Background
- Regulatory Proposal
- Next steps

BACKGROUND

Existing Regulations

- Adopted Feb 2000, amended Oct 2002
- Stringent Engine Emission Standards for Urban Buses
 - October 1, 2002 - diesels, PM 0.01 g/bhp-hr
 - 2004-2006: diesels, NOx 0.5 g/bhp-hr
 - 2007 & beyond - NOx 0.2 g/bhp-hr

Existing Regulations

- Requirements for Transit Agencies
 - Low S Diesel Fuel
 - NOx Fleet Average Reductions
 - PM Fleet Total Reductions
- Zero Emission Bus Demonstration & Purchase Requirements

REGULATORY PROPOSAL

Proposed Amendments

- Exhaust Emission Standards
- Fleet Rule for Transit Agencies
 - Urban Buses
 - Non-Urban Buses: Not Discussed Today
- Zero-Emission Bus Demonstration Project

Proposed Changes to 1956.1: Urban Bus Engine Emissions

- Diesel-fueled Hybrid-Electric Buses (HEB)
 - 2004 to 2006 Diesel HEBs May Certify to 1.8 g/bhp-hr NO_x and 0.01 g/bhp-hr PM
 - May Only Sell to Transit Agencies on the Diesel Path with Permission from Executive Officer

Proposed Changes to 1956.1: Urban Bus Engine Emissions

- Align with California 2007 HDE Standards
- Possibility of a 1.2 g/bhp-hr NO_x Emission Cap for CA Urban Buses
 - What is the Best Approach?
- Formaldehyde Emission Standard
 - Is It Needed?
 - Is It a Barrier to Technology?

Proposed Changes to 1956.1: Urban Bus Engine Emissions

- Need for Changes 2004-2006
 - Diesel HEBs Will Allow for Replacement of Old Dirty Diesel Buses in the Bay Area
- Need for Changes 2007 & Beyond
 - No Diesel and Maybe No Alternative Fuel Buses 2007-2009 will Keep the Oldest, Dirtiest Diesel Buses on the Road

Proposed Changes to Fleet Rule for Transit Agencies

- Add Hybrid-Electric Bus Definition
- Add HEB NO_x Offset Requirements for Diesel Path Transit Agencies Only
- Add Increased Flexibility in Meeting PM Reductions

Add Hybrid-Electric Bus Definition

- “Hybrid-electric bus” - an urban bus equipped with at least two sources of energy on board; this energy is converted to motive power using an electric drive motor and an auxiliary power unit, which converts consumable fuel energy into mechanical or electrical energy. The electric drive motor must be used partially or fully to drive the vehicle’s wheels.

HEB Purchase and Reporting Requirements

- Allows Transit Agencies to Purchase Diesel HEBs Meeting 1956.1(a)(11)(b) Emission Standard
- Requires
 - Emission Offset Plan Submittal Before January 1, 2005
 - Executive Officer Approval
 - Documentation of Reduction of Emission Gains Prior to Receipt of Last Diesel HEB

Urban Bus PM Reduction Flexibility

- Allow Transit Agencies to Meet an Average of 0.01 g/bhp-hr PM
- Allows for Fleet Expansion

ZERO EMISSION BUS PROGRAM

Zero-Emission Bus Rule

Summary of Current Regulation

- 7/1/03 - Start ZEB Demonstration Project
- 1/31/05 - Final project report to ARB
- 1/31/06 - ZEB status report to the Board

Requires 15% of purchases to be ZEB

- 2008-15, Diesel path
- 2010-15, Alternative fuel path

ZEB Rule - Status

- ZEB demonstration 18 to 32 months behind schedule
- Bus cost 3 to 4 times greater than anticipated during February 2000 rulemaking

ZEB Rule - Proposed Changes

- 2/28/06 - Complete demonstration fleet placement
- 7/31/05 - Interim project status report to ARB
- 1/31/06 - ZEB status report to the Board
- 7/31/07 - Final project report to ARB
- ZEB purchase requirement will not be addressed at this time

NEXT STEPS

Public Process

- First Public Workshops 12/2&3/03
- Second Public Workshops
 - 03/29/04 - Sacramento
 - 03/30/04 - El Monte
- Comments Requested by 04/02/04
- Board Hearing 06/24/04

COMMENTS REQUESTED

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 - Kathleen Mead, kmead@arb.ca.gov
 - Please cc: Nancy Steele,
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Zero Emission Bus Contact

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Questions and Comments